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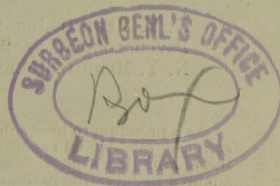
PHYSICAL DEGENERACY.

BY

NATHAN ALLEN, M. D.,

LOWELL, MASS.

[REPRINTED FROM THE JOURNAL OF PSYCHOLOGICAL MEDICINE,
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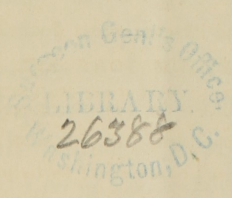
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PHYSICAL DEGENERACY.

THE term degeneracy implies a decline in qualities which were once possessed, and which pertain to a higher state of being or a more normal standard. This decline may take place slowly or rapidly, and be transient or permanent in its character. The nature of these changes and results depends of course upon the subject involved. It is proposed at the present time to point out certain changes taking place in the physical systems of large numbers of our population that show a well-marked degeneracy.

There are several points from which the lines of this declination may take their origin or start. It may be from a perfect standard of organization with which man was first created, representing the soundest and highest development of all the organs in the human body in a well-balanced state. It may also refer to the physical systems of those races and nations most advanced in civilization, or to the constitutions of the first settlers in this country, together with our immediate ancestors.

While it may be more natural and convenient to

compare the organization of those now upon the stage with that of the generations immediately preceding, and trace out the changes that have occurred from time to time, still some reference in the present discussion will be made to the first two standards mentioned. It is not our purpose to enter at all upon the domain of anthropology or ethnology, but mainly confine our observations to certain changes taking place particularly in and among people who have their origin and nativity in New England. Neither will it be possible to notice all the causes and agencies operating here to change physical organization, much less, their results; the field is too large—the subject is too complicated and the effects are too far-reaching. And as to the numerous and varied changes in morals and in mental developments, reference can be made to them only as affected by the body. The more the laws of the physical system are examined and studied, the greater will be the importance attached to them, in their influence upon mental improvement and moral development.

The causes operating to produce these changes of organization are very numerous—some external to the body and some internal. So multiplied and complex are they that it is very difficult to describe them in detail or draw distinct lines between them. Climate has always been regarded as one of the most powerful agents in changing the physical system—especially is this the case when applied to different individuals or races in removing from one residence to another; but, where the same people continue to live in the same locality for several generations, the change occasioned by climate cannot be sufficient to make any appreciable difference. Thus in New England, though there

prevails an impression that some change has occurred here in the seasons, if not in the climate, since the settlement of the country, it is so slight that not much account can be made of this alone. It is true, however, that if the constitution has become sensibly impaired by other causes, and weakened in particular organs, the same climate may have a more powerful influence upon it; but, even then, it could not be considered as a leading agent.

Among the external agents may be mentioned the effect of changes in private and public institutions, in the style of dress and state of society, in the kinds and modes of doing business, in the changes of soil, of vegetation, of air, of dwellings, in methods of education, habits of domestic life, etc., etc.; but then, many of these external agencies cannot be considered separately from the internal, which may be summed up under three general heads, viz., exercise in all its diversified forms; food, including drinks, medicine, and whatever enters into the system; and the last, though by no means the least, the effects growing out of the laws of hereditary descent. While many of the causes depend upon circumstances and surroundings frequently beyond the choice and control of individuals, still some of the most efficient, such as exercise, food, and personal habits, come within the power of every individual, provided he has sufficient intelligence.

To describe in detail all these agencies, and the precise way in which they affect the human system, does not come within the range of our present inquiry, so much as what are the direct effects of their influence upon the constitution, what actual changes they produce in the body, and what will be the probable result. Neither will it be possible to examine mi-

nutely into all these changes, or describe just how they are brought about, but simply notice those more marked and most important. With few exceptions, these changes in the system occur so gradually, so quietly, and so imperceptibly, that they are not noticed at the time, and are scarcely felt by the individual himself.

Some of these changes, it should be stated, are brought about principally by the exercise of the mental faculties. That the body, whether in a healthy or diseased state, has a direct and wonderful influence upon mental manifestations, is admitted; while, on the other hand, the exercise of the mind, including the animal propensities, the moral sentiments and intellectual faculties in all their diversified operations, has a great effect upon both the development and the functions of the physical system. The brain itself, as the organ of the mind, is subject to many changes, and, as the centre of the nervous system—which ramifies every organic tissue—exercises a powerful influence over every part of the body. And in proportion as the nervous temperament becomes more and more predominant, with a large active brain, in the same proportion will the influence of mental exercise have over physical organization. As this predominance of the nervous system is relatively increasing every year—becoming a marked feature in the type of our present civilization—the exercise of the mind and the nerves is destined to have more and more influence over the body, whether in a normal or a morbid condition. By a constant, intense, and increasing activity of mind, those organs that contribute most to its wants will not only be developed more and more by the general law of exercise, but also by sympathy and suffering,

to which this mental strain peculiarly exposes the nervous system, while, at the same time, all other parts of the body are by this means powerfully affected.

The question might here naturally arise, how, or by what process or law, is physical organization changed? To this we answer, that such changes are principally effected—

1. By the natural law of growth by exercise, nutrition, air, light, etc.

2. By positive violation of those laws which Nature has established for the growth and preservation of the system.

3. By simple neglect or want of the use of all those means necessary for the healthy growth and development of every organ in the body.

4. By disease in all its various forms and terrible results.

5. By the gradual but steady operations of the laws of hereditary descent, working for good or ill, according as they are obeyed or thwarted.

This last cause is very fruitful in results, inasmuch as it includes all the others; and, where two or three generations are taken into account, the changes that may be effected will be as equally surprising in their nature and their extent. It is not our purpose to consider these causes now, or in their regular order, as they will come under review, more or less, in discussing the various changes that have taken place in the physical system; but, before proceeding to this part of the subject, it may be well to have in mind some definite standard of physiology to which reference can occasionally be made. In all the works of Nature or art, it is a great advantage to have set before us a per-

fect standard, or the highest development of the class or kind under consideration, in order to institute proper comparisons, or make careful discrimination in the changes taking place.

When man first came from the hands of his Maker, we have reason to believe that he was created with a perfect organization. Every organ was perfect in itself—without spot or blemish; without excess or defect; without weakness or disease. Then, there was a perfect harmony or balance existing between all the organs throughout the system. This perfection of organism constitutes in human physiology a standard upon which certain general principles or laws have their basis—their foundation. It affords the only perfect standard of beauty, of health, of strength, of happiness, of longevity, and of increase; or, in other words, it provides the materials whereby all these objects may be secured in their greatest possible measure, or very highest degree of development.

For the sake of illustration and convenience in reference, we will here divide all the organs of the system into four distinct classes, called Temperaments. The word *temperament* is sometimes used to denote a mixture of qualities, including mental as well as physical; but, as here used, it is intended to apply only to different compartments of the body. The *first* division, including the brain, the spinal column, and nerves of motion and sensation, is called the *Nervous* temperament; *second*, the heart, the lungs, and all the blood-vessels in the system, called the *Sanguine* temperament; *third*, the organs in the abdomen, the stomach, bowels, liver, and absorbents, called the *Bilious* or *Lymphatic* temperament; and *fourth*, the muscles, bones,

ligaments, constituting the motive apparatus of the system, called the *Muscular* temperament.

But, unfortunately, this physiological standard, represented by a complete development of every organ in the body, and perfect harmony in all their functions, is nowhere to be found. No nation, or race, or tribe, or people upon the globe, can at the present day show perfect living examples, containing all the organs in a perfect, well-balanced state. They are only approximations to this standard.

The human constitution has been constantly changing in every age and with all classes of people. The causes are to be found partly within the body, and partly in external agencies and influences, and are sometimes observed to vary materially with the same individual or generation. Slight changes in the organization do not affect much the physical or mental character of a people; but, when a certain class of organs, or, in other words, one of the temperaments, becomes very predominant, it has a most marked, and, generally, unfavorable effect. Moreover, if only a single individual in the community here and there was found with an organism thus imperfectly developed or badly predisposed to disease, its hereditary effects would not be very perceptible; but, when large numbers, or a majority in a community, are found so constituted, not more than one or two generations can possibly pass before such effects are generally observed and become well known.

If the standard of organization here described is strictly the normal state of man, such as he had when created and would now have in his best estate, all weaknesses, all diseases, and all imperfections of the body, are abnormal, are deviations from this standard,

and of which deviations there is almost an endless variety. It is particularly in this imperfect, abnormal, diseased state of the system, that the laws of hereditary descent come into more active operation, and exert the most powerful influence. The changes effected from this source are beyond all calculation. And, when the tendencies are all in the downward direction, it would seem as though their forces were far more active, and become intensified.

With these preliminary remarks, we proceed to consider more directly and definitely the changes in human organization that indicate a decline. No evidence of much weight can be deduced from any exact statistics in figures relative to man's physical development. No extensive or very reliable collection of facts, touching the height, weight, strength, and other properties of the body, was ever gathered, that would throw much light upon this subject. But recently connected with our late war, Dr. B. A. Gould, under the direction of the Sanitary Commission, caused examinations on these points to be made upon over a million of soldiers.

In the law of growth, Quételet and other European authorities have been inclined to consider that the maximum stature of man was reached at the age of twenty-five; but Dr. Gould's examinations go to show that this maximum stature is not reached in our country till the age of thirty, and even then it varies with different classes of men. It was found by these examinations that the native soldiers of Tennessee and Kentucky were the tallest in stature; next came those from Michigan, Wisconsin, and Iowa and Illinois—many of these being born in New England; and the tallest soldiers from the Eastern States were from Vermont

and Maine. The question is here raised, What particular agency or influences favor most the growth of the body in stature? and, after examining and comparing the various theories upon this subject, Dr. Gould comes to this conclusion, namely, "That all the influences here considered—climate, nationality, comfort, elevation—may contribute in some measure to affect the stature, is more than probable; that both ancestral and local influences are recognizable is certain. And, although we cannot succeed in determining what is the *chief* agent, it may not be without value that we furnish evidence of what it is not." One object in making this quotation is, to suggest what this "*chief agent*" may be, viz., is it not *the proper exercise of certain muscles and bones, while in a state of growth, and under favorable influences?* We shall have occasion to refer to this topic in another place.

While our American soldiers took the lead in stature, the examinations showed that the representatives of other races surpassed our men in weight, strength, and certain other properties touching the dimensions of the body. As to physical stamina for enduring long marches, the hardships of camp-life, and other exposures incident to the war, it is not easy to make any satisfactory comparisons between the different classes. One thing is evident, the volunteers from our native stock were physically the best specimens of the race.

In making examinations with reference to the draft at the opening of the war, it was a matter of surprise to surgeons what a large number of men in the community were found whom, by reason of infirmities or diseases, they were obliged to exempt from the draft. If exact information could be obtained as to just what

proportion of men, at the present day, are physically disqualified for military service, the result, we believe, would surprise the public.

This brings us to consider a most important change in the organization of our people, viz., a *gradual loss of muscle* and a rapid increase of the *nervous temperament*. Its leading tendency is to diminish the stamina and vitality of the constitution, as well as increase and intensify unduly the action of the brain and nervous system. While this change, at first thought, and from certain points of view, may seem an improvement in the estimation of some persons, yet in the end, when carried out to the extent which now seems imminent, we apprehend that it will prove disastrous in its results. Perhaps the truth of this statement cannot be demonstrated by the figures of arithmetic or by exact statistics, yet we think such an amount of facts and arguments, in variety, pertinency, and force, can be presented in its favor, as to establish it beyond reasonable doubt.

In the *first place*, the increasing migration of our people from the country to the city is decidedly unfavorable to physical stamina and life. Within forty or fifty years there has been a marked change in this respect, and every year witnesses its increase more and more. The desire of raising themselves in the world and of improving their circumstances is constantly impelling large numbers in the rural districts to remove to the city or large town, where wages are higher, the advantages of society greater, and the conditions of life more attractive. With many the leading motive for change is, to get rid of the manual labor and hardships incident to country life, and obtain a livelihood in the city, by means of lighter employment or a

greater draft upon one's mental resources. The introduction of new mechanical and manufacturing business, together with the widely-extending domain of trade, is continually encouraging this migration. To such an extent has this change already been carried in population, that almost one-half of it in the older States is now found in cities and large towns, and there is reason to believe that the proportion is steadily on the increase. Now, no one truth in vital statistics is better established than the fact that *city life* tends to reduce the physical energies of the body and shorten human life. The close confinement in-doors, the breathing of vitiated air, the frequent use of unwholesome water, the increased habits of intemperance and licentiousness found in cities, have a most pernicious effect upon the human constitution, by multiplying its infirmities and its maladies. It has truly been said that an exclusively city population would certainly run out if it were not continually replenished from the country.

In the *second* place, the very general giving up of *farm-work*, and the more laborious employments, on the part of our New-England people, is very unfavorable to muscular development. It is a well-known fact that very few of our young men are now willing to follow, practically, agricultural pursuits, and every year witnesses a less and less number disposed to learn or follow the more laborious trades, such as the mason, the carpenter, the millwright, the wheelwright, etc. It is reported that the superintendents or master-workmen of such trades cannot get now apprentices at all to learn the business.

One of the most common questions at the present day is, How can we avoid manual labor or hard work? It is in part this that has led to the invention of labor-

saving machines, to substitute the use of water, steam and horse power, for human agency, and devise various means or contrivances for conveyance and travel. What a wonderful contrast between the work now performed here and that fifty or a hundred years ago! What a vast quantity of rocks were once gathered up or dug out of the ground in New England, and what an immense amount of stone-wall was laid! What an untold amount of hard work was performed in clearing the forests, in subduing the ground, in cultivating the soil, and erecting substantial buildings! Such labor made strong muscles and sound constitutions.

It is now generally admitted that neither the men nor women of the present day have the physical vigor and stamina that their parents and grandparents possessed. They cannot begin to do the work, endure the hardships, or bear the exposures of their ancestors. The constitution has changed. The strong and well-developed muscles, the large and stalwart frame, the stout and compact form, the abundant supply of pure arterial blood—all of which characterized the first settlers of this country—are now seldom found.

These facts are patent to almost any observer, but marked in the eye of the physiologist, and rendered still more striking to the physician when the change in the present type and character of the diseases is considered—so different from what they once were. While it may be difficult to define, in every case, just what changes in disease have occurred, it is admitted by the highest medical authorities that important changes have taken place, and that the treatment once required and found successful cannot now be applied.

From the testimony of aged physicians as well as from the descriptions given by different writers, it is

evident that there were, in the case of our ancestors, relatively much more acute disease, far greater violence in its attacks, and a decided higher grade of inflammation, than exist at the present day. Then, they required a great amount of venesection, and the use of powerful drugs, neither of which with us is often required or very well borne. We have, moreover, a class of diseases, arising from scrofulous complaints, states of general debility, and a predominance of the nervous system, which once were almost unknown. Formerly, cases of dyspepsia, anæmia, and neuralgia, each of which is now the source of much disease, were seldom found, but now are very common.

Dr. S. W. Mitchell, from a critical analysis of the mortuary statistics of Chicago from 1852 to 1868, when the population increased from 50,000 to 250,000, found that the diseases classed as strictly *nervous* had increased *threefold*. From a careful examination of the nomenclature of the diseases in the reports of deaths in Massachusetts for the last thirty years—the period since this registration was established—we find a marked change has relatively taken place in reference to different diseases. As some changes in their classification have been introduced during this time, it is difficult to institute exact comparisons as to the frequency of particular diseases; but, one thing is certain: that there has been a great increase of those pertaining to the brain and the nervous system. Cases of inflammation and congestion of brain, of apoplexy, of paralysis, epilepsy, convulsions, etc., are far more common now than formerly. Once apoplexy and paralysis were thought to be confined almost exclusively to persons from sixty to eighty years of age, but now they frequently occur from forty to sixty; and convulsions,

with other diseases of the brain, have increased surprisingly in case of children.

In the *fourth* place, this loss of muscle and increase of the nervous temperament, together with a change in the type and character of diseases, apply with far greater force to woman than to man. It is in her case more marked, more radical, and at the same time more disastrous in its results. Within forty or fifty years a great change has taken place in the early training of girls, as well as in the domestic habits of women. Once a large majority of the girls of our American population were taught early to understand and perform housework, which, combined with considerable outdoor exercise, served to develop strong and healthy physical frames. From the age of six to sixteen, of the girls of that period, probably not more than half their time on an average was devoted to school education or intellectual pursuits. In fact, this would apply to only the higher and wealthier classes, whereas the great majority of girls of that age had much less schooling than that.

It seems to be the order of Nature that the physical system is best developed and strengthened when the person is young—when all the tissues of the body are in a natural state of growth—and especially is this so in the case of the muscles which constitute the moving powers of the whole system. Now, no kind of exercise or work whatever is so well calculated to improve the constitution and health of females as domestic labor. By its lightness, repetition, and variety, it is peculiarly adapted to call into wholesome exercise all the muscles and organs of the body, producing an exuberance of health, vigor of frame, power of endurance, and elasticity of spirits; and to all these advan-

tages are to be added the best possible domestic habits, and a sure and enduring foundation for the highest moral and intellectual culture.

But what a change has there been within a short time in the education of girls! They are now very generally kept in school, from the age of six to sixteen, with only short intermissions for rest and recreation. Very little attention is paid to physical development and health. They grow up with muscles weak and soft, possessing but little strength and vitality. The brain, together with the nervous system, is kept continually upon a strain, producing often no doubt a brilliancy and precociousness of scholarship, without the stamina of constitution to sustain it. Hence, many girls for the want of exercise and by too close application to studies, now early break down in health, or bring on weaknesses and diseases which disable them more or less through life. And just in proportion as this training of the muscles is neglected in youth, in the same proportion will it disincline them afterward to perform house-labor, as well as all other kinds of work which requires much exertion. At the same time, there has grown up in a portion of the community a strange and most pernicious sentiment or feeling that there is some degradation attached to domestic labor, so that nearly all of it is now performed by foreign help. In consequence of this want of training or neglect of exercise, large numbers of our women do not possess that strength and firmness of muscle, that stamina and vitality of constitution, which are indispensable to sound and vigorous health. In fact, the natural law of growth and healthy development seems to have been reversed. According to physiology, this is the natural order: first, the cellular tissue, then the

muscular, the cartilaginous, the osseous, and the nervous; and, inasmuch as the muscular is the moving power of all the other tissues, its proper exercise and development in childhood become all-important. Then the brain and nervous tissue come last in the order of growth, which should not be pushed prematurely at the expense of the others. Besides, it is allowed by physiologists that, in a normal state, about one-third of the blood should go to sustain the brain, and thus in this way, one-third of the vitality of the system is consumed. It is well known that no kind of exercise uses up the vital energies or exhausts the system like that of brain-work.

Now, while all these tissues are in a growing state, they constantly require a large amount of nutrition for growth, but, if this premature exercise of the brain demands more than its legitimate share of the nutrition, the whole system must suffer. The supply is not equal to the demand. Hence, the natural growth and development of the various tissues of the body are more or less checked, causing a want of vitality—a deficiency of good arterial blood. Then commences early in life a weakness, a feebleness which pervades the whole system, a peculiar paleness indicating a state of anæmia, while, at the same time, there is almost uniformly a mental activity, a nervous excitability and restlessness, entirely unhealthy and unnatural.

In considering these changes, and their significance or tendencies, two things should be borne in mind: 1. These violations of law occur at a period the most critical in life, when certain important changes are expected in female organization, and when the healthy efforts of Nature should have the greatest possible encouragement; 2. The changes in the growth and or-

ganization of the female from the age of ten to fifteen, determine in a great measure her constitution and state of health in after-life. It is true, physical changes occur from the age of fifteen to twenty, and sometimes very important; but the leading forces that shape, direct, or modify these changes, depend principally upon the agencies and influences operating on the system in previous years. It should also be borne in mind that the changes formed at this period become generally *organic, structural*, and cannot be easily altered.

Connected with this want of muscle and vitality in woman, there are certain other conditions in her organization which indicate a decline. In consequence of neglect of physical exercise, and want of vitality, there has arisen a very general state of debility and anæmia, which is a most fruitful source of disease. In proof and illustration of this fact, there has been called for, in the treatment of women, a most surprising increase of tonics, especially in the preparations of iron. It is thought, in the whole history of the *materia medica*, there has nowhere been so great a change as in the increased variety and amount of the ferruginous preparations. While it may be impossible to estimate the exact amount of this increase, it is the opinion of some physicians in long practice, as well as druggists in extensive business, that this increase, in forty or fifty years, must be tenfold or more relatively for the same population. Besides the prescriptions of physicians, great quantities of iron are put up by druggists, and are found largely represented in patent medicines. These preparations of iron are used mostly in the treatment of female diseases or weaknesses. Once they were prescribed, after the run of a fever or attack of some acute disease, when the system had been reduce

and tonics were only temporarily required to improve the appetite and the blood ; but now, in almost all the ordinary complaints of women, iron, in some form, becomes an indispensable medicine ; in fact, in very many cases they depend upon it from day to day, from week to week, the year in and the year out, almost as much as upon their daily food. Its use has also become extensively necessary in cases of children suffering from debility and anæmia, which would have not been required if they had inherited organizations full of life and vitality, or had been rightly trained in physical exercises and had their systems properly nourished and strengthened.

There is another practice which is having a most deleterious effect upon female health, and contributes largely toward the decline and weakening of her organization. We refer to the fashions of the day or style of dress, which changes the form of the body, compresses the chest and abdomen, thereby preventing the proper expansion of the lungs, by which the blood is oxygenated ; it obstructs the natural action of the heart, the stomach, and the bowels, and depresses more or less all the internal organs, especially those in the lower part of the pelvis, thus interfering seriously with the great laws of reproduction.

Again : connected with this weak and relaxed state of the muscular tissue, and with the above-mentioned effects of fashion in dress, has sprung up a class of very grave complaints which once were comparatively unknown in our country, and are somewhat peculiar to American women. We refer particularly to weaknesses, displacements, and diseases of organs located in the pelvis. Within twenty or thirty years there have been not only marked changes in the type and character of the dis-

eases of females generally, but *this class*, comparatively new, has increased wonderfully. No one but a medical man, who has devoted special attention to this subject, can realize fully what are the nature and extent of this change, and what are its direful effects. These complaints have frequently been produced, have certainly been aggravated and sometimes made incalculably worse, by the various means and expedients which the parties have resorted to, in order to interfere with or thwart the great laws of population. It is not merely this class of complaints in themselves alone, or in their effects upon the general health, that renders them so important, but the *relations* which they sustain to the marriage institution, and the laws of reproduction. While we cannot here with propriety go into details, it may suffice to state that such are the nature and extent of these difficulties as to interfere radically with the great objects of the marriage relation, as well as of domestic life. To the thoughtful and discriminating mind this point of view affords the strongest possible evidence of decline in physical organization. And, what renders this view more discouraging is, the fact that these difficulties are hereafter likely to increase and become more and more pernicious in their influence. The marriage institution itself is suffering terribly from this source.

There is another marked change going on in the female organization at the present day, which is very significant of something wrong. In the normal state, Nature has made ample provision in the structure of the female for nursing her offspring. In order to furnish this nourishment pure in quality and abundant in quantity, she must possess a good development of the sanguine and lymphatic temperament, together

with vigorous and healthy digestive organs. Formerly such an organization was very generally possessed by American women, and they found but little difficulty in nursing their infants. It was only occasionally, in case of some defect in the organization, or where sickness of some kind had overtaken the mother, that it became necessary to resort to the wet-nurse or to feeding by hand. And the English, the Scotch, the German, the Canadian French, and the Irish women now living in this country generally nurse their children; the exceptions are rare. But how is it with our American women who become mothers? To those who have never considered this subject, and even to medical men who have never carefully looked into it, the facts when correctly and fully presented will be surprising. It has been supposed by some that all or nearly all our American women could nurse their offspring just as well as not; that the disposition only was wanting, and that they did not care about having the trouble or confinement necessarily attending it. But this is a great mistake. This very indifference or aversion shows something wrong in the organization as well as in the disposition; if the physical system were all right, the mind and natural instincts would generally be right also.

While there may be here and there cases of this kind, such an indisposition is not always found. It is a fact that large numbers of our women are anxious to nurse their offspring, and make the attempt; they persevere for a while—perhaps for weeks or months—and then fail. They find that their milk does not satisfy the child, or that it does not thrive, and they conclude there must be deficiency in the quantity or defect in the quality of the nourishment. In many

cases after repeated trials, and finding no improvement either in the child or mother, it is decided to give up nursing entirely; while others—depending partially upon nursing—resort to artificial feeding. There is still another class that cannot nurse at all, having neither the organs nor nourishment requisite even to make a beginning. The proportion of mothers that have an abundance of good milk, and can thus support the child well till time of weaning, without any artificial help, is not large. It is the opinion of some medical men of long experience and careful observation, that not one-half of our New-England women, particularly in cities, can at the present day properly nurse their offspring. Why should there be this change?

Why should there be such a difference between the women of our times and their mothers or grandmothers? Why should there be such a difference between our American women and those of foreign origin residing in the same locality, and surrounded by the same external influences? The explanation is simple; they have not the right kind of organization; there is a want of proper development of the lymphatic and sanguine temperaments—a marked deficiency in the organs of nutrition and secretion. You cannot draw water without good flowing springs. The brain and nervous system have for a long time made relatively too large a demand upon the organs of digestion and assimilation, while the exercise and development of certain other tissues in the body have been sadly neglected. That we have not misrepresented or overstated the extent of this defect existing in American women, can be abundantly proved from the extensive sale of nursing-bottles. But let the reader—and, if he

be a medical man, so much the better—cast his eye over the circle of his acquaintances among young mothers, and count up the number who nurse their offspring, then those who unite nursing with feeding, and then those who do not nurse at all, and he will be surprised to find how many will fall into the last two classes. If, as we maintain, this be owing to a decline in physical organization, what stronger proof can we have of the nature or extent of the evil? It is doubtful whether any such change of organization can be found in the history of any other people.

But the defects of the system here described do not all arise from a mere negative source; there are positive evils which cannot be remedied by any artificial means. In consequence of the great neglect of physical exercise, and the continuous application to study, together with various other influences, large numbers of our American women have altogether an undue predominance of the nervous temperament. If only here and there an individual were found with such an organization, not much harm comparatively would result, but, when a majority or nearly all have it, the evil becomes one of no small magnitude. While, in the estimation of some, it affords the most favorable conditions for the highest degree of intelligence, refinement, morality, and happiness of the individual, it does not harmonize so well with the great laws of maternity and the interests of humanity.

Besides the inherent defects in such an organization, in not making the necessary provisions for gestation and lactation, the natural instincts of woman in a pure love of offspring and domestic life become changed: the care and trouble of children are a burden; society, books, fashion, and excitement generally, are

far more attractive. The anterior lobe of the brain has been exercised altogether too much at the expense of the posterior. If the law of human increase is based upon a perfectly sound and well-balanced constitution, represented by a uniform, equal development of all the temperaments, then either extreme must be unfavorable to the propagation of the species. Such we believe is the true physiological law, and will be found verified in the history of every race, nation, and people, on the globe. Without going into the proofs of this law here, we venture the statement that no intense nervous temperament—especially when found in both parties—has ever been prolific in offspring; and the further their organization extends in that direction, and the more it is possessed on both sides, the inevitable tendency of such an organism is gradually to *run out*. In the case of our native-American people there are some powerful causes operating toward such a result—a conclusion confirmed by facts and arguments difficult to be impeached or set aside.

One of the reasons for dwelling so fully upon the defects in the organization of woman is on account of the agency she has in shaping and moulding the physical systems of those who are to come after us. It is generally believed that, in accordance with hereditary laws, the vitality, the stamina, the strength of the constitution, depend much more upon the mother than the father. It becomes, then, vastly important that she, the mother herself, should have the *right kind* of organization.

One condition in these laws is, that all imperfect developments, marked weaknesses or strong predispositions to disease, are transmitted in an *intensified* form. Hence each successive generation will suffer, in these

respects, far more than the preceding. And if these will go on accumulating, what will be the condition of things as they approach a climax? It might puzzle any one to predict; but, as in the case of an individual who obstinately and blindly pursues a course of living detrimental to health, and finds it impossible to retrieve himself when he awakes to a sense of his errors, so may a nation or a race awake too late when their mistakes or vices are ripe for retribution. Is the welfare of our people to be sacrificed to a moral blindness, or is the boasted intelligence of this generation to fall before the temptations of too great prosperity or to an overweening conceit of its own wisdom or of its own worth?

In connection with these changes of physical organization, while the peculiar diseases and great want of vitality in women have been pointed out, their effect upon shortening life or bringing on premature death has not been noticed; but the following remarkable facts have come to hand since the commencement of this paper:

Prof. Loomis, of the Howard University, Washington, D. C., communicated in the *National Medical Journal*, for April, 1870, some striking facts bearing on the want of vitality as well as the elements of longevity in our American women. In the history of all nations there has always been found a slight excess of births of males over females, to provide for the greater exposure and liability of sudden death in the former. History also shows that the vitality and longevity of woman have generally been equal to those of man; this is in harmony with the laws of the human system, and the facts hold good at the present time in England, Scotland, Ireland, Belgium, Norway, and Sweden; that

is, this equality, or slight excess of females, continues at twenty, thirty, forty, fifty, sixty years of age, and even to the end of life. In applying this great law to New York and the New-England States, Prof. Loomis remarks: "By the census of 1860, there were in these seven States 850,000 boys and 830,000 girls under ten years of age. At the age of twenty there were 15,000 females in excess of the males, and at the age of thirty there were 75,000 females more than males. Now, making proper allowances for the emigration, these figures follow very closely the law of life, as seen in the six foreign states named. But, at the age of forty, *instead of this excess of the number of females* continuing here, as it does in England, Scotland, Ireland, Belgium, Norway, and Sweden, we find that these 75,000 females have all disappeared, with 2,000 *more*; and, at the age of fifty, 20,000 in addition have followed them. Thus, 97,000 females have passed away, as they would not have done had they lived in England, Ireland, Scotland, Belgium, Norway, and Sweden. The census fails to give statistics of the health of a community, but it is well known that when vitality is so depressed as to cause such a fearful increase of deaths, results are more perceptibly seen in the living."

We predict that the census of 1870 and 1880 will disclose a still more surprising mortality among females past the age of thirty years. We leave the reader to judge for himself whether such facts prove any decline or not in human organization.

In a former part of this paper something was said respecting the leading agents that influenced the growth or stature of the human body—that "climate, nationality, comfort, and elevation, contributed in some measure to affect stature, as well as ancestral and local

influences;" but "what was the chief agent could not easily be determined." In discussing the changes taking place in the organization of our people, the *form* and *size* of the body should not pass by unnoticed. In the loss of muscle and increase of nerve-tissue, together with diminished vitality, we maintain that there must be a gradual change going on in the *stature*, *form*, and *size* of the body. The outline of framework of the system is made up principally of certain muscles and bones, and the growth of these is insured at a certain age by proper exercise and nutrition, under other favorable influences. The differences of various races and nations, as well as of individuals, in these respects, we think, can be explained in some measure by the application of this principle. The size and form of the body depend much also upon the proper development of the organs ranged under the lymphatic and sanguine temperaments. A predominance of the nervous system is seldom accompanied with a body of large size or structure, but is more generally found in persons of slender build and medium size. While changes in the stature, form, and size of people, as a whole, cannot be determined at once, two or three generations cannot pass without their becoming very perceptible.

In a former place we referred to the portly forms, large size, stout build, and strong constitution, of our forefathers. The descriptions and portraits of our Puritan mothers represent them for successive generations as possessing well-developed bodies, and in many instances of large size. Such is the testimony of elderly people generally, and they comment particularly on the diminutive size and slender form of the women of the present day. Testimony similar to this has often been borne by foreign tourists visiting our country, especially

in respect to our females. This change in the constitution is more important as applied to them on account of the laws of hereditary descent. While we may not be able to demonstrate in figures that such changes as are described above have actually taken place among our people, we do maintain that there are causes now operating and likely to continue, which, fifty years hence, will produce marked results in the height, weight, and other physical properties, of the system. In fact, we submit whether there are not already positive indications in the changed features, forms, and dimensions, of the persons now on the stage, that a decline in this respect has actually commenced.

There is another topic which may afford us an instructive lesson, whether operating as *cause* or *effect* in the past, or at the present time. We have seen what a change has taken place in the disposition of men in respect to manual labor—that a strong disinclination prevails, especially among young men, to do farm-work, or to follow the more laborious of the mechanical trades, or any other kind of business requiring much hardship or exposure; and that, if possible, a greater change has occurred with women in respect to house-work, as well as to all kinds of physical labor, demanding great exertion or severe exercise. This aversion to manual labor or hard work, while it extends to all classes, comes, seemingly, more from young people than from the middle-aged. Now, what mean these complaints, if a decline in physical vigor and strength has not already commenced? Besides, if such a course in respect to hard work is to be pursued by all our young people, what will be its effects ultimately upon their constitutions?

Again: what means this general complaint in the

community about having too many hours of labor? Twelve hours in a day are considered too many; ten also are not acceptable; and, if a law passes Congress fixing a day's work at eight hours, we apprehend, after a while many persons will want a still further reduction. Without expressing any opinion as to this reform, is there not some philosophy or hidden meaning in its teachings? Does it not indicate some radical change in the physiological conditions of a people, indicative of inability, as well as indisposition, to labor? Would our ancestors, or the generation immediately preceding us, ever have made such complaints? Would any people, full of physical vigor and strength, and abounding in all the elements of healthy growth and activity, thus complain? Does it not indicate that the great currents of life and health are not flowing smoothly all in one direction?

We might here ask what will be the effect in the proposed reduction of the hours of labor? Perhaps it will be time enough to inquire when the reduction actually takes place—when men have more leisure and more temptations to idleness and dissipation. But it may not be deemed irrelevant to suggest that, if we exercise our muscles less, the less size, vitality, and strength, will those muscles possess, and the greater will be the danger of falling into indolent and effeminate habits, which are equally incompatible with vigor of body and strength of mind.

There is one point in this discussion to which we feel it a duty to refer, but we do not feel at liberty here fully to discuss. In the various changes of organization, there is no one in all its bearings so important as that connected with the development and functions of the sexual organs. If a thorough discus-

sion of this question could be had, based upon physiological and hygienic laws, in its bearing upon individual health, and as connected with the relations between the sexes, and as affecting the marriage institution, it would show, we think, marked evidences of physical decline. Such a discussion would furnish, if we mistake not, a key not only to much of the discord in domestic life, but also to the increasing infidelity of husbands to their wives, as well as to the great number of divorces constantly taking place. It might explain also some of the causes of licentiousness which is thought to be increasing in the community, and suggest new views and measures of reform for this terrible evil.

We come now to consider a different class of agents affecting the system, including food, drinks, medicines, etc., etc. And perhaps we cannot introduce them better than by quoting the testimony of a distinguished medical writer, who, after considerable observation and study, sums up the "*vices*" of the Americans under the following heads:

1. An inordinate passion for riches.
2. Overwork of body and mind in the pursuit of business.
3. Undue hurry and excitement in all the affairs of life.
4. Intemperance in eating, drinking, and smoking.
5. A general disregard of the true laws of life and health.

Why our people should be so indifferent about human life, as such, or in the preservation of health, it is difficult to explain. Nevertheless, the fact is true. This indifference is strikingly manifest in their neglecting to take seasonable and proper care of themselves

when ill ; in trusting their lives, when sick, in the hands of empirics and charlatans ; in taking large quantities of patent medicine, the composition of which they are entirely ignorant of ; in swallowing compound mixtures highly recommended indeed, but by whom they know not ; and the same trait is still more strikingly exhibited in a persistent, self-willed determination to continue certain habits or practices, which, from repeated warnings and expostulations, they know will hasten, if not cause their death.

This disregard of life is also manifest in the general indifference of the public in cases frequently occurring, where one or more persons are drowned ; in cases of suicide, or death by accident ; and in those railroad disasters or steamboat explosions where human life is sacrificed on a still larger scale, how slight the shock, and how soon forgotten ! Then, in the late war, what a sacrifice of life ! What multitudes either killed in battle, or died by wounds, or by disease, and in prison under circumstances the most awful and appalling ! Yet, how soon will this terrible loss of life and all these heart-rending scenes be comparatively forgotten ! What this writer means by intemperance in "eating" is not so readily perceived ; undoubtedly in many instances our tables are loaded with too much variety, as well as too great quantity of food ; but it is impossible to adapt these two conditions to the habits, tastes, and health, of all persons. We incline to think that this "intemperance"—at least a large part of it—consists in something else more peculiar to Americans, and that is generally decidedly vicious or injurious, among which may be enumerated :

1. The hasty manner of eating—of bolting down food, without sufficient mastication, or giving time for

the glands in the mouth and throat to make the necessary secretions.

2. The practice of eating so much fine-flour bread, and that, too, frequently warm and poorly cooked.

3. The substitution of strong coffee and tea for plain or simpler drinks.

4. And the increased use of a rich, highly-seasoned, and stimulating diet.

Within forty or fifty years there has been a marked change in the mode of living—in some respects greatly improved, but in others calculated to impair the health and the constitution. The change in organization, to an increased nervous tissue, demands a change in regimen richer in quality, more highly seasoned, and stimulating. The appetite and taste both become more exquisite, more capricious, and more exacting. For instance, tea and coffee are used not only in greater quantities, but must constantly be made nicer and stronger, and the demand for condiments, as well as desserts, has greatly increased, and every year they must be made richer and more heating or stimulating.

At the same time, such a style of living and drinking serves to increase this nervous temperament more and more. The immediate tendency, therefore, of such a course, is to produce in this direction a species of physical degeneracy. It begets not only positive disease, but causes numerous weaknesses and complicated derangements in the system, which lay the foundation for complaints that may be partially relieved, but never cured. Such is neuralgia in all its endless forms, when based upon such an organization. Every experienced physician knows full well the difficulty of

treating or curing that class of diseases called "neuroses," and that they are constantly multiplying.

Under the head of "drinking and smoking," we include alcoholic drinks, opiates, and tobacco. While there may be much plausible argument in favor of the moderate use of these articles at times, in the type of organization found in the human system at the present day, still, according to all rational laws of physiology and pathology, their frequent, habitual, and extensive use, must be condemned. They should be resorted to only as *medicinal agents*, and then under the direction of a wise and experienced physician.

As these articles are now used in our country, there is no question but that they are decidedly injurious to the constitutions of our people, sapping their blood and blighting their health, and producing more or less a species of physical degeneracy. They injure not only the body of the individual by poisoning his blood, by producing disease and causing frequently premature death, but impair the sound, healthy action of the brain, thus striking a deadly blow at mental habits, as well as moral and religious character. But the evil does not stop here. It is transmitted to offspring even to the third and fourth generations, and sometimes in an intensified form. Where the seeds of disease and vice are thus transmitted, it becomes doubly important to avoid the cause. That the continuous and excessive use of alcoholic drinks, as well as of tobacco, whether by chewing or smoking, causes fatal diseases of the liver, of the stomach, and of the heart, is admitted by the highest medical authorities. While no examination can show exactly how many are killed by either one or both of these agents, operating as first or secondary causes, it is undoubtedly true that great num-

bers do thus hasten their deaths. Besides, multitudes in the community carry through life the signs of decay from this source, in their walk, in their countenances, and throughout their whole physical systems.

Whatever differences of opinion may exist in the community as to whether the use of intoxicating drinks as a whole is increasing or not, there can be no question, we think, about the increased use of opium and tobacco. The sales of opium, in its different forms, have greatly increased within a few years, and it is well known to druggists and physicians that large quantities of this drug—mostly in the form of morphine—are consumed somewhat privately by individuals and families, either as an anodyne or as a stimulating agent. If the real facts could be obtained as to the fearful extent and the terrible effects of the drug as used in this way, it would surprise and alarm the public. When this drug once gets possession of its victim, there is no retreat, and the evidences of physical and mental degeneracy soon become well marked.

That the use of tobacco, particularly in smoking, is rapidly increasing, is too apparent to require proof. And what should cause most regret in the matter is, that so many young men are resorting to this pernicious practice. The evils of this habit have been so often pointed out in detail that it seems unnecessary to repeat them here, or even dwell upon them. But we venture the statement that the use of tobacco, chiefly in smoking, is exercising a most destructive influence upon the physical and mental energies of great multitudes of our people; and that, by its continued increase, together with the law of hereditary descent, it is destined to result in an untold amount of physical degeneracy.

In respect to the other charges against Americans above mentioned, namely, "inordinate passion for riches, overwork of body and mind, and undue hurry and excitement," we admit there is too much truth in them, and that they have a most intimate connection with the subject under discussion. From remarks previously made on the nervous temperament, it will readily be seen that "hurry and excitement" grow naturally in part out of the excess of this organization, and at the same time they help to develop it more and more, thereby aggravating the evil. This is one of the most discouraging features in the matter as to any future reform, namely, that the very evil itself operates both as a *cause and effect*, in conformity with a well-known law of morbid action.

But this "passion for riches," and this "overwork of body and mind," have a broader, deeper, and far more significant meaning, than what appears upon a cursory survey. From this source spring some of the most powerful influences to undermine the constitution and the health of our people. We have set up a standard of living too expensive—yea, extravagant—that has too many wants; we have not, as a people, the physical stamina or brain-power to reach this standard and live by it; a few individuals may do it, but the many cannot. Multitudes, attracted by the prize set before them, enter the arena, but a few only reach the goal.

This standard is all-powerful in influence, including the fashions of the day, the equipage, the style, and the manner of living, both of individuals and families. Its main-spring is *money—money—money*—which, in the language of the wise man, "answereth all things." Consequently, *money* must be obtained by all means,

and at whatever hazard or cost. The appeal it makes to young people, and particularly to heads of families, is almost omnipotent, and reminds us of the famous lines of the classic satirist, which have been not inaptly rendered :

“My friend, get money; get a large estate,
By honest means; but get at any rate.”

In this struggle for gain, what multitudes early break down in health, bring on disease, and sink into premature graves! How fast some men grow old, what picked and haggard countenances, what careworn and wrinkled features, what frail and lean bodies do we behold! What a large number of business men die now in the *prime of life* at thirty, forty, and fifty, when they should live to sixty, seventy, and eighty! How many *sudden deaths* occur among such men, which would not in a healthy state of society!

How rapidly changes the organization of young men, in this battle of life, from freshness of countenance, vigor of muscle, and elasticity of spirits, to the pale complexion, the feeble body, and languid gait! And the changes wrought in the constitution, health, and spirits of our women, in the headlong pursuit of fashion and style, is no less marked and deplorable. Do not such evidences and illustrations of change fully justify the conclusions we have drawn from them, and awaken forebodings of still greater evils? Can any one foretell what is to be the result of this state of things? There is one result growing out of this predominance of the nervous temperament, as well as *fast living*, that deserves more than a passing notice, namely, *mental derangement*. This is one of the worst kinds or features of physical degeneracy. Cases of insanity have been constantly increasing, particularly throughout

New England, for many years, so that lunatic hospitals, both public and private, have been crowded for a long time. Such a result must inevitably occur from this great predominance of and strain upon the nervous system, as well as from such a continuous intense application of the mind. But this increase of insanity is not so perceptible now as it will be twenty-five or fifty years hence. Should changes in physical organization, similar to those here described, continue for one or two generations, *it will, it must result* in a great increase of mental derangement. Such is the dependence in this world of all mental manifestations upon the development and state of the physical system, especially of the brain, that such a result cannot be otherwise in the very nature of things.

There is a class of facts capable of being expressed in figures, which, if we could obtain a true and correct report of them, would furnish positive evidence bearing upon the subject. We refer to changes in the rate of births and deaths. But, as it is impossible to get exact statistical tables here, we shall attempt merely an approximation to the truth in figures, accompanied with some explanations and general statements. When the census of 1870, now being taken, is complete, it will more than confirm any representations or predictions we may here make.

That there are, at the present time, many less children for the same population, or for the same number of families than formerly, is very apparent. By the census returns of 1765 and 1865, there are now found only about one-half as many children, under fifteen years of age, relatively to the adult population, as there were one hundred years ago.

Formerly the average number of children to each

family would range from six to eight, but probably now will not exceed four, and may not much over three. As it is a fact, settled by mortuary statistics, that about two-fifths of all children born die before reaching adult life, and it is well known that there are a goodly number of persons who will not marry (and the indications are that this class, relatively, is likely to increase), there must be an average of about four births to every family, otherwise the original stock is not kept good in numbers.

The registration returns of births, deaths, and marriages, have now been made in Massachusetts for over twenty-five years; and no fact, from those returns, as well as from other sources, is more apparent than that the *birth-rate of our American people has been constantly diminishing*. From 1850 to 1860 the average birth-rate by these returns was 1 to 33, omitting the fraction; but, during the five years of war, the average was 1 to 39; and, since the war, the average has been 1 to 36. In 1850, the census returns the population of Massachusetts 994,514: American, 830,066; and foreign, 164,448; the registration reports make the whole births 27,664: American, 16,189; foreign, 8,197, with 3,278 mixed, most of which are of foreign descent. Th last census, 1865, returns the whole population in the same State, 1,267,003: American, 1,002,545; and foreigners, 265,486; the registration report makes for the same year the whole number of births 30,249: American, 13,276; foreign, 14,130, and mixed, 2,406.

In the census column headed "American," a large number of persons are included simply because born here, whose parentage is strictly foreign; and so in the registration reports, under the column births American,

there are enrolled some of foreign descent, because their parents were born here. Hence, it is very difficult to obtain separately the exact *birth-rate of the two classes*.

After making the best attempts we can to analyze these returns, and compare the births of the two classes since the war, we find the birth-rate of the foreign (that of the whole averaging 1 to 36 for several years) going below 1 to 30; but that of the American must range considerably above 1 in 40, and perhaps extending up to near 1 in 50.

In the history of European nations it has been found that, in order for any nation to increase much in population, the birth-rate must come up to about 1 in 30. Our last United States census report gives the birth-rate of the following nations thus, omitting fractions: Saxony, 25; Prussia, 26; Austria, 26; Sardinia, 27; Bavaria 29; Netherlands, 30; England, 30; Norway, 31; Denmark, 32; Sweden, 32; Hanover, 32; Belgium, 34; France, 37.

The question has been raised whether France, with a birth-rate of 1 in 37, was actually increasing in population at the present time, and great doubts have been expressed in regard to it by some of her wisest statisticians.

The death-rate of Massachusetts, as a whole, averages for twenty years a little over 1 in 50; admitting that there is relatively a greater number of deaths among the foreign than the American, it is very evident, after all, that the *birth-rate* and the *death-rate*, among the strictly native-American population have been approximating for many years nearer and nearer to each other. In many of the country towns as well as in several of the cities of Massachusetts, there is good ground to believe, from the registration reports and other sources, that the

number of deaths among this class of citizens every year outnumbers that of the births. After canvassing this subject from every point of view, we think it will be very difficult to prove that there is in this class, or has been for many years, much, if any increase. It has been said the emigration going from New England is sufficient to account for this fact; but, a careful, impartial, and thorough investigation of the whole subject will convince any candid mind to the contrary.

In conclusion, the facts and deductions above set forth may prove any thing but palatable, inasmuch as they conflict with national pride, and, in some measure, with a sense of self-respect; and those who take offence may be ready to seek revenge by impugning the motives of the writer as well as denying his positions. But, as we have never sought popularity by flattering the prejudices of our contemporaries, so neither have we been deterred from uttering truth by fear of obloquy. Without arrogating the office of a censor, we have been gradually led by force of evidence to the conclusions which we have at various times expressed.

And a sense of duty, we think, would not only justify any man, under like circumstances, in doing the same thing, but would impose upon him a sacred obligation so to act. And, if the publication of these facts will serve in any measure to check growing evils or introduce a healthier manner of living, more correct modes of culture, more just or elevated aims, the writer will feel himself amply compensated, whatever may be the reception awarded to his efforts.

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